

## Global Topography at High Resolution: Shuttle Radar Topography Mission

The Shuttle Radar Topography Mission (SRTM) used radar interferometry to derive elevation models for most of the Earth's landmass ( $\pm 60$  degrees latitude) at 30 meter resolution. Processing and release of these data are currently in progress. This new data set opens several opportunities for geologic investigations.

Geologic features and processes are commonly evident from their topographic expression. Depositional landforms are usually distinctive in morphology, and erosional processes commonly reveal lithologic contrasts and structural patterns. Satellite imagery has provided detailed views of the Earth's landforms in recent decades, but the third dimension (topographic height) has generally been obscure and interpretable only from natural time-of-observation shade patterns. Site by site derivation of elevation models from stereo optical imagery has been cumbersome, expensive, and subject to obscuration by clouds. SRTM eliminates these difficulties.

SRTM data are particularly effective in combination with satellite imagery. Anaglyphs and color stereo pairs (with user specified vertical exaggeration) are easily generated and analyzed on standard desktop computers with simple and basic software and hardware. However, SRTM data are also an effective resource even when visualized solely. User controlled shaded relief and/or color coded height can substitute for image overlays and can be viewed in two or three dimensions. SRTM will produce the first detailed views of regional topography for many parts of the world, which should lead to greater understandings of tectonic, fluvial, glacial, eolian, and mass wasting patterns and processes.